(C)   REMARKS AND ARGUMENTS

1.   Amendments to the Claims

Summary of Claim Amendments

Claim 1 has been amended:

- so as to be directed to an embedded microprocessor, rather than to an embedded processor system;

- in sub-paragraph (a), to describe the processor core with greater specificity;

- in sub-paragraph (c), to describe the supervisory control unit with greater specificity;

- in sub-paragraph (d), to describe the memory with greater specificity, and in particular to indicate that the memory is integral rather than external to the processor;

- in sub-paragraph (e), to indicate that the peripheral adaptor is integral rather than external to the processor;

- by the addition of sub-paragraph (f), to indicate and clarify the manner in which program threads are executed by the processor core; and

- by the addition of sub-paragraph (g), to indicate that the processor pipeline will complete one one-word instruction per clock cycle.

Claims 2-10 have been so as to be directed to an embedded microprocessor, rather than to an embedded processor system, in view of the corresponding amendment to Claim 1. Claims 2-10 are otherwise unchanged from the amendment filed in response to the non-final action dated April 16, 2004.

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2. Claim Rejections on Grounds of Anticipation under 35 USC § 102

In ¶¶4-13 of the Final Action, the Examiner rejected Claim 1-3, 6-7, 9-10, 16, and 17 on grounds of anticipation in view of the Parady reference (U.S. Patent No. 5,933,627).   The present amendments to Claim 1 introduce limitations that are not taught by Parady, including in particular:

- the memory is internally integral to the processor and comprising main RAM and a boot ROM;

  - in contrast, the memory of Parady as referred to in ¶5.d of the Final Action is merely an instruction fetch buffer; furthermore, Parady's main memory is external to the processor;

- the peripheral adaptor is internally integral to the processor;

  - the peripherals of Parady as referred to in ¶5.e of the Final Action are external to the processor;

- the processor is configured as a single pipeline, such that multiple program instruction threads move through the pipeline in staggered fashion (i.e., with each program thread being at a different stage in the pipeline) and in serial fashion (i.e., the instruction threads progress through the pipeline in "lock step" in accordance with the sequence of pipeline stages);

  - in contrast, Parady provides for multiple pipelines with hardware thread-switching in various scenarios (col. 3, lines 57ff.);

- the processor core executes one one-word program instruction per clock cycle, thus providing predictable execution timing, not only within each program thread but also between threads (see Fig. 3);

  - whereas in Parady the execution time at each pipeline stage is variable according to various contingencies (e.g., cache misses).

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In view of the foregoing amendments, it is submitted that Claim 1 is not anticipated by Parady. It follows that Claims 2-20, all of which are dependent from Claim 1, are not anticipated by Parady.

3.   Claim Rejections on Grounds of Obviousness under 35 USC § 103

In ¶¶14-37 of the Final Action, the Examiner rejected Claim 4-5, 8, 11-15, and 18-20 on grounds of obviousness in view of Parady and various other cited references. In view of the amendments discussed above, it is submitted that Claim 1 is not obvious in view of any combination of cited references, and therefore Claims 2-20 are non-obvious as well.
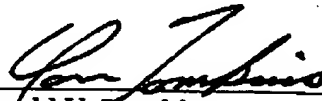
4.   No New Matter

It is submitted that the present amendments introduce no new matter into the application. All subject matter contained in the application, as amended hereby, was expressly described in or is reasonably inferable from the originally-filed specification, claims, abstract, and/or drawings.

(D)   CONCLUDING REMARKS

Applicant respectfully submits that the amendments presented herein have fully addressed all issues raised in the Final Action, and that the application will be in condition for allowance upon entry of the amendments. Accordingly, Applicant requests timely issuance of a Notice of Allowance.

Respectfully submitted on behalf of the
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